

Sampling and Analysis Plan  
(SAP)  
For the  
Former Pacific Electric Motors Facility  
1009 66th Avenue  
Oakland, , California

November, 2009

Prepared under notification requirements of 40CFR761.61(a)(3)

## **1.0 INTRODUCTION**

This sampling plan is to accompany the Toxic Substance Control Act (TSCA) Self-Implementing Cleanup Notification and Certification (SICNC) prepared for the Former Pacific Electric Motors Facility 1009 66th Avenue in Oakland, California dated, October 23, 2009. The SICNC was submitted on behalf of Aspire Charter Schools (Aspire) by LFR Inc. an Arcadis Company (LFR) to the U.S. Environmental Protection Agency (U.S. EPA) on October 23, 2009.

### **1.1 Summary Information**

This SAP was developed to detail the sample collection and analyses of soil samples after excavation of a polychlorinated biphenyls (PCB) contaminated area to confirm that all remaining soil is below at or below 0.39 milligrams per kilogram (mg/kg) PCB. Qualified subcontractors retained by Aspire will conduct excavation, soil sampling, and analysis to verify that the PCBs concentrations in the soil remaining after excavation are below the site specific clean up goal of 0.39 mg/kg for PCBs.

This SAP has been prepared to conform with the standard operating and field quality assurance procedures detailed in the USEPA document entitled, "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual" (EISOPQAM), dated 1997.

### **1.2 Data Quality Objectives**

The data quality objectives (DQOs) for chemical data management for the former Pacific Electric Motors Site located at 1009 66<sup>th</sup> Avenue in Oakland, California (the "Site") are:

- Document excavation control sample collection and analysis procedures and results;
- Implement additional excavation of soils at locations that contain PCBs above 0.39 mg/kg; and
- Collect quality control samples of soil to be sent to an offsite laboratory for confirmation by gas chromatograph using SW-846 Method 8082.

### **1.3 Target Excavation Levels**

The target excavation levels for the excavation of PCBs in soil at this Site are:

- PCBs = less than 0.39 mg/kg.

Other criteria for the non-TSCA removals are being conducted under the regulatory oversight of the Alameda County Environmental Health Department (ACEH) in accordance with the Revised Corrective Action Plan, Proposed Aspire High School Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411; the "CAP") submitted to the ACEH on July 17, 2009.

## 2.0 EXCAVATION SAMPLING AND ANALYSIS

### 2.1 Quality Assurance / Quality Control

The quality assurance (QA) objectives for this project include the following criteria:

- **Precision** – a measure of the variability or random error in sampling, handling, preservation, or analysis.
- **Accuracy** – a measure of the closeness of an individual measurement or an average number of measurements to the true value.
- **Completeness** – a measurement of the amount of valid data obtained compared to the amount expected.
- **Representativeness** – the degree to which data characterize the actual conditions at the site.
- **Comparability** – the confidence which one set of data can be compared with another

Excavation sampling and analysis of soil is used to indicate when the PCB concentration in the remaining soil has been reduced to below the site-specific clean up goal of 0.39 mg/kg.

### 2.2 Excavation Confirmation Soil Sampling Procedure

The following excavation sampling method has been developed to satisfy the regulatory requirements outlined in 40 Code of Federal Regulations (CFR) 761 Subpart G, 40 CFR 761.130, and has been used successfully in the field at US EPA Superfund sites for PCB removal.

- Establish an approximate 30 foot by 30 foot overlay grid for the area showing higher PCB concentrations. The overlay grid should be orientated on a map also showing the historical PCB sampling. The grids will form the basis of the excavation and sampling documentation (See attached map).
- The soil samples will be collected in laboratory supplied containers from undisturbed soil removed from the excavation within a backhoe bucket or by driving a sample tube lined slide hammer into “in place” soil along the sidewall or bottom of the excavation.
- Additional sidewall or bottom samples can be collected at the discretion of the field personnel
- Collect side wall samples from the approximate mid-point between the bottom and top of the excavation or within 2 feet of the grid center.
- Collect soil samples from the bottom the excavation on an approximate 30 foot by 30 foot grid; at least one bottom sample will be collected from each excavation.
- Analyze the confirmation soil samples at a state-certified off-site laboratory and processed using SW 846 method 8082.

- Confirmation soil samples from either the floor or sidewalls that contain 0.39 mg/kg PCB or less shall be a confirmation that high-level PCB soils have been removed. Confirmation soil samples that contain greater than 0.39 mg/kg PCB shall be an indication that the specific grid needs further excavation in order to remove the PCB affected soil from the affected area.

The grid can be expanded to follow the contamination as uncovered and determined during field activities. Smaller grids, or rectangular grids, may be used to further pin-point the contaminants.

## 2.3 Sample Handling and Documentation

Sample custody procedures described in this section will be used for sample collection, shipping, analysis, and disposal. Each excavated soil/sediment sample will be labeled and sealed immediately after compositing. Sample containers will be 4 or 8 ounce laboratory supplied glass jars, and no preservative will be used. Samples will be labeled according to the numbering system described in Section 2.3.1. The soil samples to be submitted to the laboratory will be labeled with the sample identification(see below), the time and date of collection, the analysis requested, and the initials of the sampler. The samples will be stored in an ice-chilled cooler and submitted to the laboratory under strict chain-of-custody protocols. LFR shall coordinate with the laboratory for the delivery of collected soil samples under chain-of-custody protocols for chemical analysis.

### 2.3.1 Sample Numbering System

The sample numbering system is comprised of the following elements:

Example: EXC – PCB 1 – Sidewall – Northwest – 2’:

|                       |                 |                  |                    |
|-----------------------|-----------------|------------------|--------------------|
| Excavation            | Sidewall or     | Compass          | Depth              |
| <u>Identification</u> | <u>Bottom</u>   | <u>Direction</u> | <u>Below Grade</u> |
| <b>EXC PCB-1</b>      | <b>Sidewall</b> | <b>Northwest</b> | <b>2 Feet</b>      |

The sample numbering system is selected to be compatible with sample identification and control procedures.

### 2.3.2 Sample Description

The sample description provides a narrative description of the sample. The sample description designates during what point in the process the sample is taken, and if the sample is a duplicate.

### 2.3.3 Sample Quantity

All confirmation soil samples collected from each excavation grid will be at least 30 grams (one ounce).

## 2.4 Sampling Equipment Decontamination

Sampling equipment cleaning procedures are described in this section. Specifications for standard cleaning materials referred to in this section are as follows:

- Soap will be a standard brand of phosphate-free laboratory detergent such as Liquinox®. Use of other detergent must be justified and documented in the field logbooks.
- Tap water may be used from any municipal water treatment system. Use of an untreated potable water supply is not an acceptable substitute for tap water.
- Organic/analyte free water is defined as tap water that has been treated with activated carbon and deionizing units.

Improperly handled cleaning solutions may easily become contaminated. Storage and application containers must be constructed of the proper materials to ensure their integrity. Following are acceptable materials used containing the specified cleaning solutions:

- Soap must be kept in clean plastic, metal, or glass containers until used. It should be poured directly from the container during use.
- Tap water must be kept in clean tanks, hand pressure sprayers, and squeeze bottles, applied directly from a hose.
- Analyte free water must be stored in clean glass, stainless steel, or plastic containers that can be closed prior to use. It can be applied from plastic squeeze bottles.
- Organic/analyte free water must be stored in clean glass, Teflon®, or stainless steel containers prior to use. It may be applied using Teflon® squeeze bottles.

### 2.4.1 Sampling Equipment Decontamination Procedure

The following procedures are to be used for all sampling equipment:

1. Clean with tap water and soap using a brush if necessary to remove particulate matter and surface films.
2. Rinse thoroughly with tap water
3. Cover the equipment with plastic. Equipment stored overnight should be wrapped in aluminum foil and covered with clean, unused plastic.

#### **2.4.2 Management of Investigation Derived Waste**

Materials that can become investigation derived waste (IDW) are:

- Personal protective equipment (PPE) – this includes disposable coveralls, gloves, booties, respirator canisters, splash suits, etc.
- Disposable equipment – This includes plastic ground and equipment covers, aluminum foil conduit pipe, Teflon® tubing, broken or unused sample containers, sample container boxes, tape, etc.

**Disposal of Sampling Derived Waste  
Former Pacific Electric Motors  
Oakland, California**

| <b>TYPE</b>                  | <b>HAZARDOUS</b>   | <b>NON-HAZARDOUS</b>  |
|------------------------------|--|---|
| <b>PPE - Disposable</b>      | Containerize in 55-gallon drums with tight-fitting lids. Ship off-site for disposal at an approved disposal facility.  | Double bag waste. Place in dumpster for final off-site disposal                               |
| <b>PPE – Reusable</b>        | Decontaminate per standard operating procedures. If the equipment cannot be decontaminated, Containerize in plastic 5-gallon bucket with tight-fitting lid. Ship off site for disposal at an approved disposal facility. | Decontaminate per standard operating procedures.  |
| <b>Decontamination Water</b> | Use as dust control on soil being shipped off-site for PCB disposal. Ship off site for disposal at an approved disposal facility.  | Containerize in 55-gallon drums. Ship off site for disposal at an approved disposal facility. |
| <b>Disposal Equipment</b>    | Containerize in 55-gallon drums. Ship off site for disposal at an approved disposal facility.  | Ship off site in bulk for disposal at an approved disposal facility.                          |
| <b>Trash</b>                 | Not applicable   | Double bag waste. Place in dumpster for final off-site disposal                               |

Grid Excavation Worksheet (or hand drawn map)

NUMBER OF GRID \_\_\_\_\_ DATE \_\_\_\_\_

|  |   |   |
|--|---|---|
| Sidewall-<br>Sample-<br>Survey<br>Point        | Sidewall-<br>Sample-<br>Survey<br>Point |   |
| Bottom-<br>Sample-<br>Survey<br>Point<br>_____ |   |   |
| Sidewall-<br>Sample-<br>Survey<br>Point        | Sidewall-<br>Sample-<br>Survey<br>Point | <div style="border: 1px solid black; height: 70px; width: 100%;"></div> <div style="border: 1px solid black; height: 70px; width: 100%;"></div> <div style="border: 1px solid black; height: 70px; width: 100%;"></div> |